Chapter 4

Working with Operator Objects

Introduction

Before new users can log into and access an N30 site, an Operator object must first be defined for each user. The Operator object dictates password and login ID entry guidelines and specifies complete access privileges for each user. Only site administrators can create, modify, and delete this object.

This chapter describes how to:

- add an Operator object
- edit an Operator object
- command an Operator object
- change any Operator password
- change the ADMIN password
- delete an Operator object

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Key Concepts

Operator Object

Added for each user in a site and configured according to the access the user needs or requires for certain object categories. For instance, a Security Guard's Operator object allows the viewing of Security objects, whereas the Building Manager's Operator object allows the adding and deleting of HVAC objects.

Administrator

The only user of a site with the ability to create, modify, or delete operator objects. With the exception that the administrator cannot change an Operator password after its initial creation, the administrator has unrestricted access to and control over all other objects defined for the site.

The administrator's Login ID is ADMIN and the default password is 2468. The user assigned it is responsible for changing the administrator password for their site and keeping it recorded in a secure place.

Because an administrator is the only user with access to Operator objects, he or she is the only user who can issue commands, such as Enable and Disable, to these objects.

Site Manager Device

The device in a site that contains the master Site object. The master Site object synchronizes all global objects.

Copy Holder Device

Thie device that maintains copies of Redundant objects within each site. The Copy Holder device name is an attribute of the Site Data object.

Global Objects

Objects duplicated at each site-configured device. The master, stored on the Site Manager device, is recorded complete with object name. The copies of each global object are disseminated to all other N30 devices, but without an object name. The Site Data and two administrative Operator objects are global objects.

Users can neither create additional global objects nor remove any entries from any pre-defined set of global objects. The Site Manager device is responsible for ensuring that attribute values associated with all global objects are synchronized across all devices. Changes can be made only to the named global objects maintained on the Site Manager device.

Redundant Objects

Objects for which a copy is maintained for each object instance. The master or named instance is loaded into a specified host device. The copy is automatically copied to the Copy Holder device where it is retained as a backup in case a host device goes offline or becomes inoperable. All non-administrative Operator objects fall into this classification.

User Access Feature

A feature that establishes and maintains a core access capability, which can be expanded to meet increasing levels of sophistication.

A site can range from a single VT100 configured N30 device to one consisting of fifty networked N30 devices (or ten N31s). As such, the User Access feature focuses on these primary objectives:

1. Identify legitimate users and grant each an access level based on his or her role and site responsibilities (via the configuration of the Operator object).
2. Ensure that all devices can be accessed by at least a few operators at all times (even if network communications between N30 devices is not functioning).
    - A copy of the administrator Operator object is added or downloaded to the Site Manager device and then distributed to each of the site's N30 devices.
    - By maintaining copies in each N30, the administrator is essentially guaranteed access to all objects on the site, even during a network breakdown. During such a disruption, the administrator must be physically logged into the N30 device containing the object to be accessed using a VT100 Terminal.

3. Minimize the chance of users losing their ability to log into a site due to a single N30 device breakdown.
   - Designating one of the N30 devices on the site as the Copy Holder device ensures the maintenance of a copy of each non-administrative Operator object defined in the site.
   - A user attempting to log in whose Operator object resides in a non-operational N30, automatically has his or her login ID and password entry verified against the copy of his Operator object maintained in the site's Copy Holder device.

Guidelines for Defining User Access

Table 4-1 provides guidelines for defining user access.

Table 4-1: Guidelines for Defining User Access

Guideline	Description
Assigning Objects to Object Categories	• When created, all objects are defaulted to the HVAC object category. Access to objects intended for special applications (such as fire or security) can be easily restricted. • Objects that require greater restrictions should be segregated into one of the other categories (Fire, Security, Services, or Administrative). • Only the user intended to have access to these objects should be granted any level of access to these categories.
Understanding the User Login Validation Process	When the user logs into a VT100 equipped N30 device, the user's Login ID and Password entries are compared against those defined in each of the site's Operator objects. This search and comparison process consists of the following steps. 1. The entries are compared against the administrator Operator object, which is locally maintained within each site's configured N30 devices. 2. If no match is found, the entries are compared against each non-administrator Operator object maintained within the N30 device that the user is using to log into the site. 3. If no match is found, the entries are compared against each copy of all the Operator objects defined for the site. This activity is performed by the Copy Holder device. 4. If the Copy Holder device is offline or is undefined, all N30 devices are queried to determine which (if any) of the devices has an Operator object through which the user entries can be validated. 5. If no match is found by the end of this validation sequence, the user is denied access.
Assigning Operator Objects to N30 Devices (see Figure 4-1)	**In a fully operational site**, an Operator object can reside anywhere. However, in practice, you can take steps to help minimize the chances that an offline N30 or a faulty communications network could prevent a legitimate operator from successfully logging into a site. **In sites with one VT100 Terminal**, locate all Operator objects within the N30 device that the VT100 is interfaced to, if enough memory is available. Following this guideline, the possibility of a required Operator object being located in an offline N30 is negated. **In sites consisting of two VT100-equipped N30 devices**, locate all Operator objects within either of these N30 devices. Note in the next section that one N30 should be the Site Manager and the other N30 should be designated the Copy Holder device. **In sites equipped with more than two VT100 interfaces**, locate each Operator object within the VT100-equipped N30 that the operator is most apt to use routinely.

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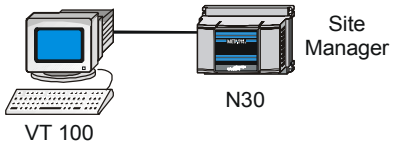
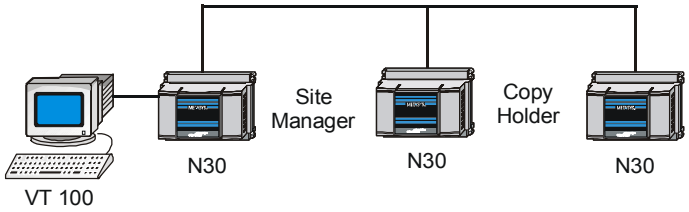
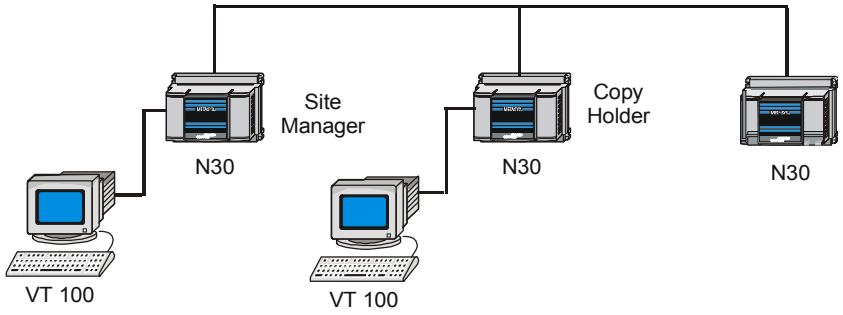
Guideline (Cont.)	Description
Designating Site Manager and Copy Holder Devices (see Figure 4-1)	**Site Manager Configuration**: Unless there is a reason for not doing so (available memory, etc.), designate a VT100-equipped N30 device to be the Site Manager. **Copy Holder Configuration**: Unless there is a reason for not doing so (available memory, etc.), designate a Copy Holder as follows: • For a standalone configuration, Copy Holder designation is not required. • For a single VT100 and multiple N30 devices, any device can be designated Copy Holder as long as all Operator objects have been loaded into the single VT100 equipped N30 device. • For multiple VT100s, direct the Copy Holder designation to one of the other VT100-equipped N30 devices. Since the Copy Holder retains a copy of each Operator object defined for the site, login access attempted through this device is virtually guaranteed to any legitimate operator.



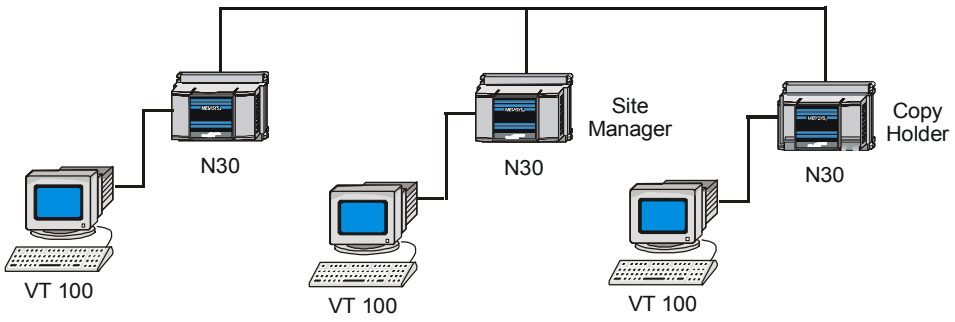
Standalone N30 Configuration



Multiple N30 Configuration with Single VT100 Monitor



Multiple N30 Configuration with Two VT100 Monitors



Multiple N30 Configuration, Each with a VT100 Monitor

SiteCopy

Figure 4-1: Site Manager/Copy Holder Designations

Attributes

The values of an object's attributes determine how the object operates. The Operator object attributes described below are listed in the order that they appear on the screen.

For additional information about the Operator object and its attributes, refer to the *Object Dictionary*.

Object Name

Identifies the object on the user interface. For the Operator object, the Login ID is the object name.

Description

Provides optional information to further describe the object.

Object Type

Indicates the kind of object, such as Schedule, N2 Analog Input, or Operator.

Object Category

Determines the general classification of an object to help define user access capability and message routing.

Enabled

Determines whether the user associated with a specific Operator object can log on to the site. True indicates that the user can log on to the site; False indicates that a user cannot log on to the site.

Password

Determines the password that a specific user must enter to log on to the site. The Password must be a number of characters equal to or greater than the Minimum Password Length defined for the site by the Site Data object. The Password is case sensitive.

User ID

Appears as a string output on a printed status report and identifies the user that has acknowledged an alarm.

Login ID

Determines the Login ID that a specific user must enter to log on to the site. The Login ID may be up to 32 characters long.

IMPORTANT: As of Release 2.0, the Login ID is case sensitive.

User Group

Determines which Group object (if any) appears directly under the main container on the main N30 screen. Once the Group is added to the Group container, the exact name of a Group object must be entered in the User Group field of an Operator object, in order for that Group object to appear directly under the main container whenever that user logs in.

For more information regarding User Group, refer to the *Working with Group Objects (LIT-6892060)* chapter of this document.

Timeout

Indicates the amount of time that must elapse before a VT100 session expires due to no keyboard activity.

Acknowledge

Specifies if the user has the ability to recognize alarm reports. Alarm reports may be routed to terminals being used.

Display Units

Defines which units are used for display when the operator is logged in.

User Capability

Dictates the user's relative degree of access, such as Configure, Modify, etc., for each of the site's five object categories.

The five object categories for which the user must have an access level defined are identified in Table 4-2. Since non-administrative users have no access to objects in the Administrative category, the entry for this category defaults to No Access, and the Administrative field is not accessible from the VT100. The administrator receives a default access level of Configure to all five object categories.

Table 4-2: Object Categories

Category	Description
HVAC	Categorizes an object as relating to Heating, Ventilating and Air Conditioning functions.
Fire	Categorizes an object as relating to Fire functions.
Security	Categorizes an object as relating to Security functions.
Services	Categorizes an object as relating to Services functions.
Administrative	Categorizes an object as relating to Administrative functions. Only Operator objects can be categorized as Administrative and only the site administrator can access these objects.

For each of the five object categories identified above, a user must be assigned (through the User Capability attribute of the Operator object) one of the seven access levels defined in Table 4-3. These access levels represent the degree of functional capability a user has when accessing objects assigned to the object category. A user receives all capabilities defined at the assigned level and below.

Table 4-3: Access Levels

Access Level	Description
Configure	Can create, add, delete, upload, and download.
Modify	Can release, release all, change attributes, enable, and disable objects.
Supervise	Can override at Command Priority 8 (Operator Override).
Intervene	Can set time and date, declare points Out of Service, Lock/Unlock loads, and Cancel Timer.
Operate	Can start, stop, adjust, etc., at Command Priority 16 (Default).
View	Can only view attribute details.
No Access	Can see the object listed on the browser but not the details.

As an example, one user may be granted a Configure access level to objects categorized as HVAC but only given a View access level to objects categorized as Security, and No Access to objects assigned to the Fire, Security, or Administrative object categories.

Another more experienced user may be granted the ability to Configure objects in all four of the categories – HVAC, Fire, Security, and Services.

Operator Object Example

Figure 4-2 is an example of the flexibility of Operator objects. This example illustrates the following:

- The Login ID entry was kept short by using just the user's first name and the initial of the last name. To ensure clarity, the user's full name was entered in the Description field.
- The User Group reference tailors the user interface to the user's specific needs. For more information, refer to *Working with Groups (LIT-6892060)* in this manual.
- Careful consideration to User Capability ensures that the user is granted the appropriate access level to the four object categories accessible to non-administrator operators.
- The login ID becomes the name of the defined Operator object.

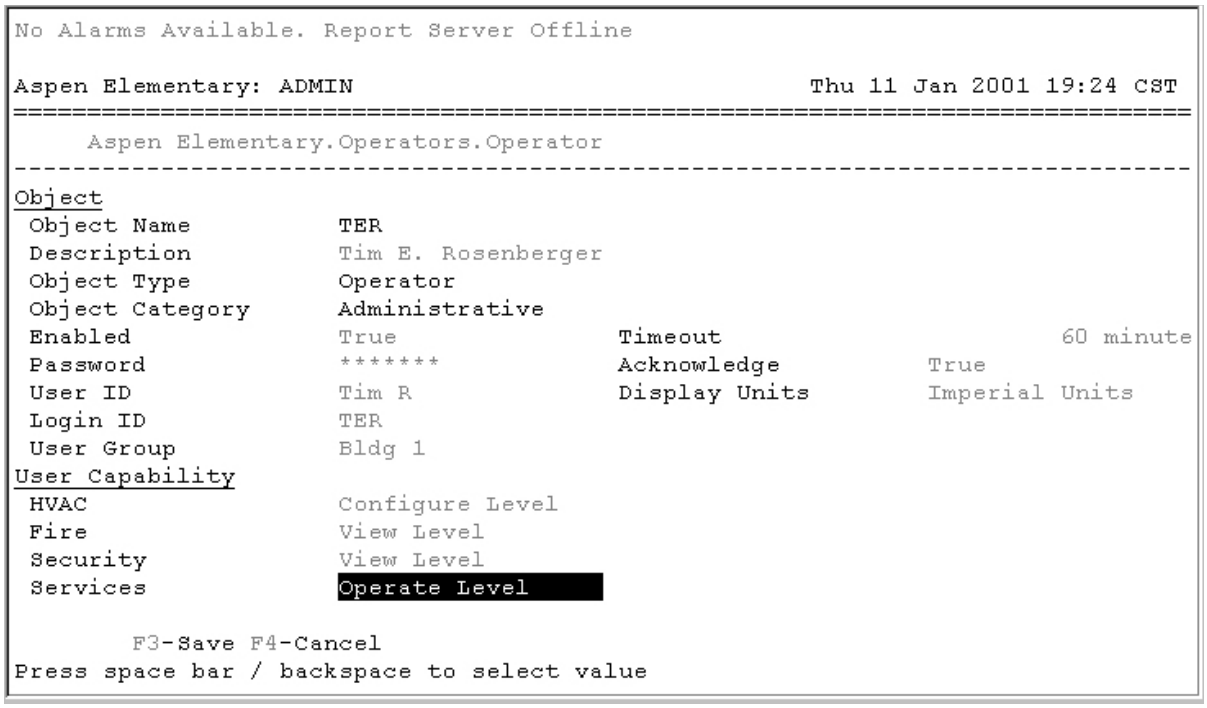


Figure 4-2: Operator Object Example

Procedure Overview

Table 4-4: Working with Operator Objects

To Do This	Follow These Steps:
Add an Operator Object	Browse to and highlight the Operators container. Press the F3 (Add) key. Highlight Operator and press Enter. Fill in the fields using Table 4-5. Press the F3 (Save) key. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. Press any key to continue. Press the F4 (Cancel) key to return to the container hierarchy.
Edit an Operator Object	Browse to and highlight an Operator object. Press Enter to open the object. Press the F3 (Edit) key. Edit the fields using Table 4-5. Press the F3 (Save) key to save the changes. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. Press any key to continue. Press the F4 (Cancel) key to return to the container hierarchy.
Command an Operator Object	Browse to and highlight an Operator object. Press the F2 (Command) key. Use the Spacebar and the Backspace key to cycle through the list until the desired command appears. Press Enter.
Changing Any Operator Password	Log on to the N30 using the login ID and password of the user whose password is to be changed. Browse to and expand the Operators container. Highlight the Operator object. Press the F2 (Command) key. Use the Spacebar and the Backspace key to cycle through the list until Change Password appears. Press Enter to move to the next field. Pressing the Tab or down arrow key also moves the cursor to the next field. In the New Password field, type a new password. Press Enter to move to the next field. Type the password again in the Confirm New Password field. Press Enter.
Change the ADMIN Password	Log on to the N30 using the ADMIN login ID and password. In the N30 device object designated as the Site Manager, expand the Internals container. Highlight the Operator object named site name.Operator {1}. Press Enter to open the object. Press the F2 (Command) key. Press Enter to move to the next field. Pressing the Tab or down arrow key also moves the cursor to the next field. In the New Password field, type a new password. Press Enter to move to the next field. Type the password again in the Confirm New Password field. Press Enter.
Delete an Operator Object	Browse to and highlight an Operator object. Press Enter to open the object. Press the Delete key. Press the Tab key to confirm the deletion.

Detailed Procedures

Adding an Operator Object

Note: The Administrator of the site is the only user who can add an Operator object.

To add an Operator object:

1. Browse to and highlight the Operators container.
2. Press the F3 (Add) key. The Add Objects list appears.
3. Highlight Operator and press Enter. The Operator object attribute screen appears (Figure 4-3).

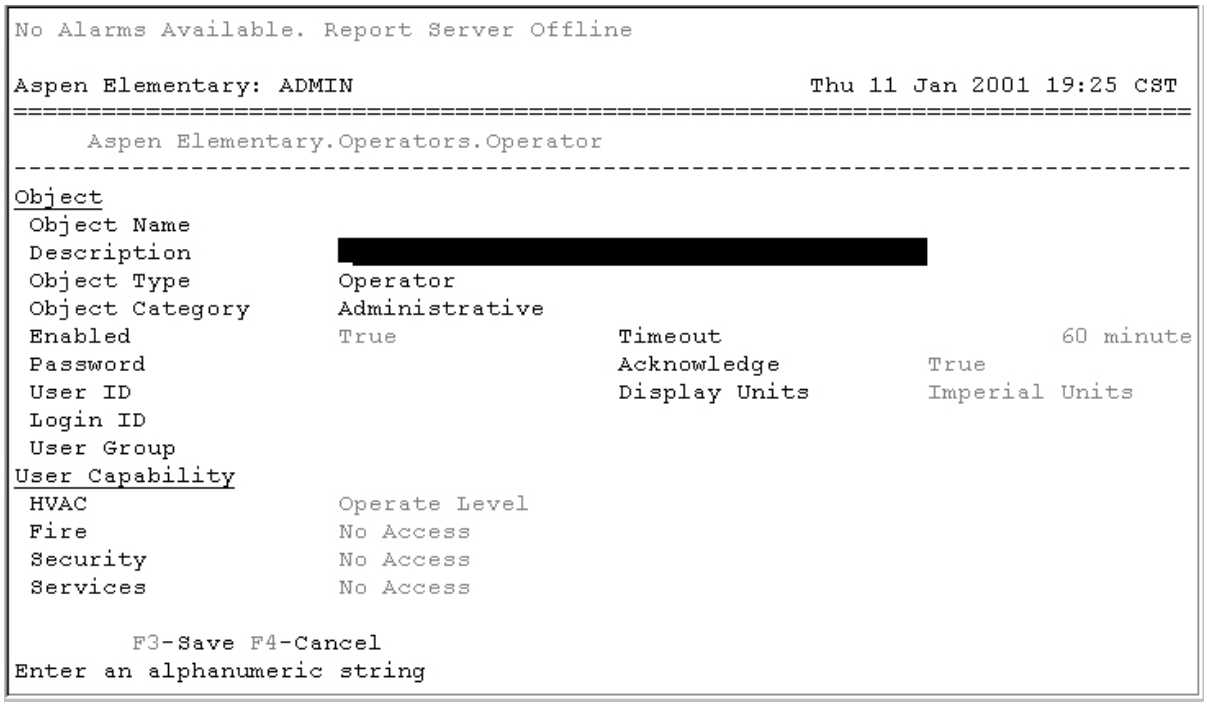


Figure 4-3: Operator Object Attribute Screen

4. Fill in the fields using Table 4-5.

Table 4-5: Attribute Entry Requirements

Screen Area	Attribute	Required	Default	Options/Range
Object	Object Name	No	Blank	Determined by the Login ID.
	Description	No	Blank	Maximum 40 characters
	Object Type	Yes	Operator	Default is preset and cannot be changed.
	Object Category	Yes	Administrative All other Operator objects have the default HVAC.	Use the Spacebar and Backspace key to view and select options: HVAC, Fire, Security, Services, Administrative.
	Enabled	Yes	True	Use the Spacebar and Backspace key to view and select options: True, False.
	Login ID	Yes	Blank	Maximum 32 characters This entry identifies the object in the container hierarchy. It is recommended to keep this entry as short as possible because the user must type this in for each login.
	Password	Yes	Blank	Maximum 8 characters The Password is case sensitive.
	User ID	Yes	Blank	1 to 8 characters
	User Group	No	Blank	Maximum 32 characters
	Timeout	No	60	Minimum value = 1 Maximum value = 1440 Units = minutes
	Acknowledge	No	True	Use the Spacebar and Backspace key to view and select options: True, False.
	Display Units	Yes	Imperial Units	Imperial Units SI Can Units SI Eur Units
User Capability	HVAC	Yes	Operate	Use the Spacebar and Backspace key to view and select options: No Access, View, Operate, Intervene, Supervise, Modify, or Configure.
	Fire	Yes	No Access	
	Security	Yes	No Access	
	Services	Yes	No Access	

5. Press the F3 (Save) key.
6. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 7.
7. Press any key to continue.
8. Press the F4 (Cancel) key to return to the container hierarchy.

Editing an Operator Object

Note: The Administrator of the site is the only user who can edit an Operator object.

To edit an Operator object:

1. Browse to and highlight an Operator object.
2. Press Enter to open the object.
3. Press the F3 (Edit) key. The Operator object attribute screen appears (Figure 4-3).
4. Edit the fields using Table 4-5.
5. Press the F3 (Save) key to save the changes.
6. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 7.
7. Press any key to continue.
8. Press F4 (Cancel) to return to the container hierarchy.

Commanding an Operator Object

To command an Operator object:

1. Browse to and highlight an Operator object.
2. Press the F2 (Command) key. The Command field appears.
3. Use the Spacebar and the Backspace key to cycle through the list until the desired command appears. The Operator object supports the commands described in Table 4-6.

Table 4-6: Operator Object Commands

Command	Description
Enable	Allows the user to log on and access the site according to the user access levels defined by the Operator object.
Disable	Prevents the user from logging on to the site.

4. Press Enter.

Changing Any Operator Password

Note: Administrative and non-administrative Operator objects are maintained in different locations.

To change any Operator password:

1. Log on to the N30 using the login ID and password of the user whose password is to be changed. This is the only way the Change Password command is available.
2. Browse to and expand the Operators container.
3. Highlight the Operator object.
4. Press the F2 (Command) key. The Command field appears.
5. Use the Spacebar and the Backspace key to cycle through the list until Change Password appears.
6. Press Enter to move to the next field.

Note: Pressing the Tab or down arrow key also moves the cursor to the next field.

7. In the New Password field, type a new password.
8. Press Enter to move to the next field.
9. Type the password again in the Confirm New Password field.
10. Press Enter.

Changing the ADMIN Password

Note: Administrative and non-administrative Operator objects are maintained in different locations.

To change the ADMIN password:

1. Log on to the N30 using the ADMIN login ID and password. This is the only way the Change Password command is available.
2. In the N30 device object designated as the Site Manager, expand the Internals container.
3. Highlight the Operator object named site name. Operator {1}. For example, BROWN DEER. Operator {1} (Figure 4-4).

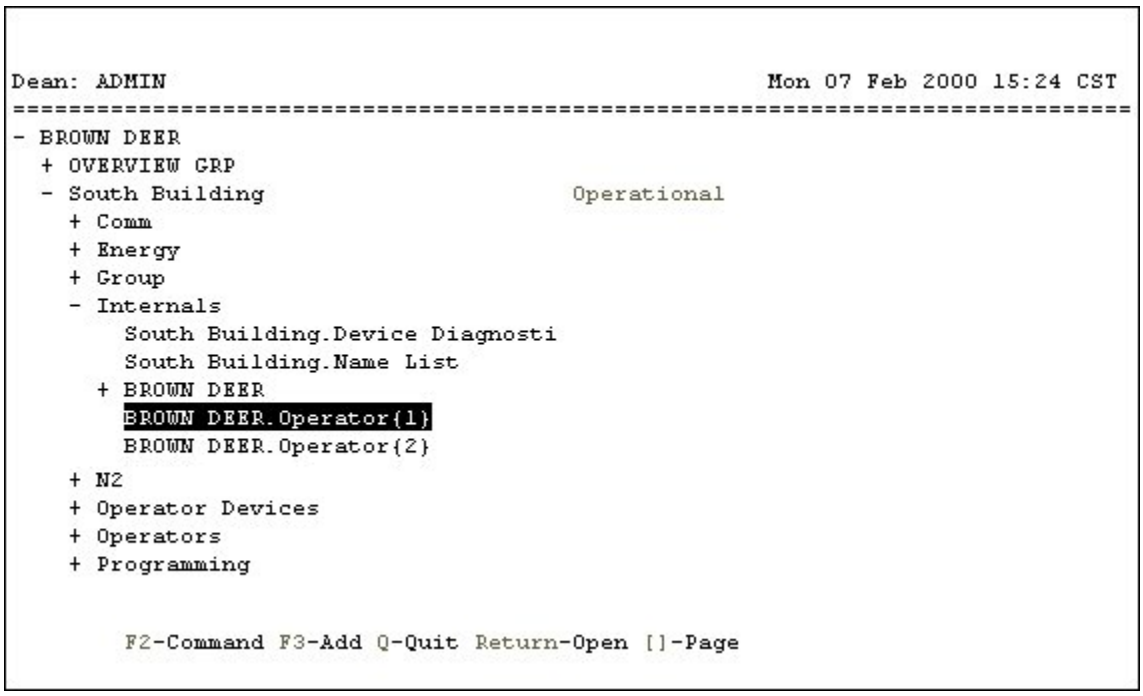


Figure 4-4: SITE NAME.Operator {1}

4. Press Enter to open the object.
5. Press the F2 (Command) key. The Command field appears with only the Change Password available.
6. Press Enter to move to the next field.

Note: Pressing the Tab or down arrow key also moves the cursor to the next field.

7. In the New Password field, type a new password.
8. Press Enter to move to the next field.
9. Type the password again in the Confirm New Password field.
10. Press Enter.

Deleting an Operator Object

Note: The Administrator of the site is the only user who can delete an Operator object

To delete an Operator object:

1. Browse to and highlight an Operator object.
2. Press Enter to open the object.
3. Press the Delete key.
4. Press the Tab key to confirm the deletion.